

Peter F. Bannigan

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Residence
615 Franklin Street
Duxbury, MA 02332
Tel: 781.837.6176 or 339.832.1872

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Mr. Ian A. Bowles, Secretary
Executive Office of Energy and Environmental Affairs
100 Cambridge, 9th Floor
Boston, Massachusetts 02114

Dear Secretary Bowles:

I am writing to comment on a radio program that ran on WBUR today, 3/18/2008, titled "Credit Crunch Snares Biofuels Industry." I participated in the January 17th, 2008 public hearing at the State House and submitted written testimony to the Task Force. The point of the radio piece starts with the current price of biodiesel, \$5.00 +/-, and goes on to highlight the financial issues facing the industry and the ominous consequences posed by the rising cost of certain crops, the down turn in the credit markets and recent research that challenges the green nature of the biofuels concept.

Crops like corn, soybeans and various grains have seen a significant increase in their respective price per bushel because of a number of factors that are both nationally and internationally in nature. The global need to feed a growing population along with an increase in more affluent global population increasingly looking to consume a more wholesome diet compounded by the global effort to use agricultural to replace petroleum as a fuel source have all conspired to put increased pressure on prices. The normal weather cycles that affect the growing seasons around the world add an additional layer of uncertainty that also puts upward price pressure on crops like corn, soybeans and others.

Specific to the United States and by reference the Commonwealth the price of biofuels has increased and will continue to remain high because of the federal governments push for corn and soybean based biofuels, the reduced corn crop yields in Australia, the establishment of export tariffs on grain crops by the Chinese government and the historically low reserves held by the major global producers. In addition, the cost of converting grain crops like corn and soybeans are such that they take as much or more energy to produce an equivalent gallon of fuel as petroleum based refining does and these crops do in fact release more carbon gas than they store as explained below.

The most recent research papers, that challenge the green nature of biofuels, most often referenced appeared in the journal *Science* last month and they are: "Use of U.S. Croplands for Biofuels Increases Greenhouse Gases Through Emissions from Land Use" by Timothy Searchinger, Ralph Heimlich, R. A. Houghton, Fengxia Dong, Amani Elobeid, Jacinto Fabiosa, Simla Tokgoz, Dermot Hayes, and Tun-Hsiang Yu Published online 7 February 2008 [DOI: 10.1126/science.1151861] (in *Science Express Reports*) and "Clearing and Biofuel Carbon Debt" by Joseph Fargione, Jason Hill, David Tilman, Stephen Polasky, and Peter Hawthorne, Published online 7 February 2008 [DOI: 10.1126/science.1152747] (in *Science Express Reports*).

The point of both studies is that the destruction of forest and grasslands to plant corn and other similar types of biofuel crops will result in a net release of greenhouse gas and using these

crops does not solve the petroleum fuel problem anyway. The reason for this net increase in greenhouse gas emissions is related to the carbon absorption and subsequent harvesting methods of cultivated crops like corn versus that of natural growing grasses and forest fauna's ability to absorb and store carbon. Secondly the studies point out that cultivated biofuel crops like corn and soybeans do not produce a positive energy balance when all of the inputs required to convert the crop to a biofuel are accounted for and that they will also contribute to food price inflation and/or shortages going forward. All of the above is true regarding these crops within the confines of the principal action(s) and methodologies being studied. Also aggravating the total price picture is the current meltdown of the credit markets which put many emerging business at risk.

What they fail to take into account is the use of natural occurring grasses that are mowed when harvested therefore retaining the carbon captured by the root systems and the fact that the United States has no need to convert forests land to croplands given the significant quantity of fallow land that is available. Research conducted by Cornell and The University of Minnesota show that grasses, as an example, have a positive carbon gas capture aspect and they produce a positive yield when converted to a biofuel. Based on research the same is expected to be true for algae, cellulosics and other sources as well. The point being that there are many options well beyond those that are focused on in the press and by individual researchers.

As you and the other members of the Task Force are well aware there are any number of better alternatives to corn, soy and the other grains used for biofuels that need to be explored and developed to insure the best economic choices are available to replace our dependence on foreign imports. Given the importance of developing a sustainable source of energy that is under our national control is of such importance governmental action is legitimate and required but requires considerable thought and caution.

Where the federal initiative falls short is its biased approach in assuming that biofuels from these cultivated crops is the principal means of achieving energy independence. It would have been much better to broadly fund a variety of crop technologies and see which ones were best suited for fuel production in a similar vain to what was done during WW II when we needed to convert oil to rubber. More than likely the issues facing corn and soybeans will be proven; that they are not a good source for the production of biofuels. I suspect that as oil prices continue to increase the fallacy of pushing these and other crops will be highlighted and regardless of the Bush administration's preferences the common sense of the market will prevail.

The legitimate role of government in this case, at a minimum, is to insure that a level economic and business playing field is established and maintained, that a broad expansive research program is encouraged and that funding is available to take the technology out of the lab and in to the field so that the optimal technologies can emerge to meet the needs of the nation and the Commonwealth. I would urge you and the members of the Advanced Biofuels Task Force to disregard the common sentiments of the moment and the missteps of the Bush administration and congress and continue the important work of establishing a common sense framework for the industry.

Thanks for your time and please feel free to contact me if you have any questions or issues with the above.

Sincerely,


Peter Bannigan